Rubric for lab reports completed in PLNU General Education lab courses (BIO 101, 103, 105, 210, and 211) for assessment of GE Learning outcomes 1A and 1B:

"Demonstrate effective <u>written</u> and oral communication skills, both as individuals and groups."

"Use <u>quantitative analysis</u>, qualitative analysis, and <u>logic skills</u> to address questions and solve problems."

Component	Initial	Emerging	Developed	Highly Developed
Introduction and hypothesis	• No indication of purpose of the research • Provides no background information • Hypothesis is missing	• Some indication of purpose of the research • Provides some background information, but some is inaccurate or irrelevant • Provides the hypothesis, but the hypothesis is unclear or confusing	• Clearly articulates the purpose of the research • Provides some accurate and relevant background information • Clearly identifies the hypothesis	• Clearly articulates the purpose of the research, beyond the narrow topic • Provides excellent background information • Clearly identifies the hypothesis
Methods and Materials	• Methods are unclear and incomplete and materials are not sufficiently identified • No variables correctly identified	• Methods are basically explained, but incomplete with some materials not included • Some variables correctly identified	• Explains methods and materials, but missing some details • Most variables correctly identified	• Clearly and completely explains methods and materials • All variables correctly identified
Results	• Graphs and tables are poorly/inaccurately done • No mention of tables/graphs in text • Many opinion statements	• Graphs and tables are inaccurate/missing labels with some errors • Summarizes tables and graphs in text • No clear reference to specific tables/graphs in text • Obvious opinion statements	• Graphs and tables are adequate but some labels/titles missing • Generally accurately summarizes the tables and graphs in text • Clear reference to some tables/graphs in the text • Some opinion statements	• Graphs and tables are well done and accurately labeled and titled • Accurately summarizes the tables and graphs in text • Clear reference to all tables/graphs in the text • No opinion statements
Conclusion(s)	• Fails to identify conclusions, or conclusion is a simplistic summary with no connection to original hypothesis • Minimal consideration of limitations	• Identifies conclusions and refers to some specific pieces of evidence, but no connection to original hypothesis • Minimal consideration of limitations • No mention of implications or future research	• Clearly links evidence with the conclusion, but not the original hypothesis • Minimal consideration of limitations • Presents implications and possible future research	• Clearly links evidence with the conclusion and the original hypothesis • Considers limitations of the study • Presents implications and possible future research
Writing quality	• No sections labeled • Simplistic and/or unclear writing • Many errors	• Some sections clearly labeled • Unclear writing • Some errors	• Most section clearly labeled • Clear writing • Few errors	• All sections cleared labeled • Clear and sophisticated writing using advanced vocabulary; enjoyable to read • No errors